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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/724,605 | TOKIOKA ET AL. | |
| | Examiner | Art Unit | |
| | Jessica L. Ward | 1733 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *19 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *13-18 and 20-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-18 and 20-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/29/07, 1/10/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## FINAL ACTION

### *Claim Objections*

1. Claim 25 is objected to because of the following informalities: "step" should be --steps-- in line 2. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 24, it is unclear what Applicant means by "wherein in the step of heating locally, the member is heated by heating the entire airtight container." How can local heating also heat the container? This is contradictory to what locally heating means and what Applicant believes his invention to be. Applicant is asked to clarify. It is suggested to change this phrase to --wherein during the step of heating locally, the member is heated by heating the entire container--.

As to claim 25, it is unclear what Applicant means by "penetrating the low-melting point substance between the substrate and the member by heating the low-melting point substance? Does Applicant mean that the low-melting point substance, which is between the substrate and member because it is located at the corner portion formed by the substrate and member, is penetrated by heating (i.e. heat penetrates the low-melting point substance)? Or does Applicant mean that heating causes the low-melting point substance to penetrate between the substrate and

member? If Applicant intends the latter, it should be noted that it is melting of the low-melting point substance and not just heating that causes this penetration (p. 11 of specification). Applicant is asked to clarify.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Vrijssen (US 4710673, previously cited).

As to claim 25, the reference teaches a method of manufacturing an airtight container by:

- setting a member (2 or 7) for defining an airtight space together with a substrate (2 or 7) to abut on the substrate to form a corner portion between the member and the substrate (Figures 2 or 3),
- applying a low-melting point substance (9) to the corner portion or to a portion to be the corner portion (abstract; column 2, lines 4-10; column 3, lines 52-53; column 4, lines 20-21),
- performing airtight bonding between the substrate and the member with the low-melting point substance to form a closed bonding line by performing heating to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding (Figure 3; column 3, lines 27-56), and then

- by curing the low-melting point substance successively at a plurality of small areas arranged along the corner portion (Figure 3; column 2, lines 29-40), wherein the performing step includes penetrating the low-melting point substance between the substrate and member by heating the low-melting point substance (Figure 2; column 3, lines 32-35).

*It is noted that the present invention does not actively cure the low-melting point substance. Instead, each successive heated/melted portion of the low-melting point substance undergoes cooling and solidification (curing) simply by moving the local heating means away from a heated/melted portion and placing it adjacent to a portion of the low-melting point substance that has yet to be heated (p. 21, lines 16-22). Vrijssen achieves cooling/solidification of the low-melting point substance in the same exact manner as the present invention (column 2, lines 29-40) and therefore the reference teaches curing the low-melting point substance "successively at a plurality of small areas arranged along the corner portion."

6. Claim 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Haven et al. (US 2235681, previously cited).

As to claim 25, the reference teaches a method of manufacturing an airtight container by:

- setting a member (29) for defining an airtight space together with a substrate (34) to abut on the substrate to form a corner portion between the member and the substrate,
- applying a low-melting point substance (91) to the corner portion or to a portion to be the corner portion (Figures 18-19; p. 4, column 2, lines 61-62; p. 5, column 1, lines 69-75),

- performing airtight bonding between the substrate and the member with the low-melting point substance to form a closed bonding line by performing heating to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding (209°F = 98°C; p. 5, right column, lines 1-3; p. 6, left column, lines 1-22), and then
- by curing the low-melting point substance successively at a plurality of small areas arranged along the corner portion, wherein the performing step includes penetrating the low-melting point substance between the substrate and member by heating the low-melting point substance (p. 6, left column, lines 39-45).

*It is noted that the present invention does not actively cure the low-melting point substance. Instead, each successive heated/melted portion of the low-melting point substance undergoes cooling and solidification (curing) simply by moving the local heating means away from a heated/melted portion and placing it adjacent to a portion of the low-melting point substance that has yet to be heated (p. 21, lines 16-22). Haven achieves cooling/solidification of the low-melting point substance in the same exact manner as the present invention and therefore the reference teaches curing the low-melting point substance "successively at a plurality of small areas arranged along the corner portion."

As to claim 27, the reference teaches such (Figure 19; p. 5, right column, line 66-75).

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vrijssen (US 4710673) as applied to claim 25 above and further in view of Seishi et al. (JP 1298626, listed in IDS).

As to claim 26, it would have been obvious to perform bonding within an evacuated atmosphere because such is known in the art when locally heating/melting a bonding material to bond two components together to form an image display apparatus, as taught by Seishi (extracted translation provided by Applicant), where the vacuum environment prevents contamination of the display apparatus.

9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vrijssen (US 4710673) as applied to claim 25 above and further in view of Veerasamy (US 6365242, previously cited).

As to claim 27, it would have been obvious to provide an underlying film, which has improved wettability with the low-melting point substance, beneath the low-melting point substance because such is known in the art when using a low-melting point substance, such as indium or indium alloy, to bond components together because the film allows the low-melting point substance to better adhere to the components, as taught by Veerasamy (Figures 6 and 9; column 8, lines 37-42; column 6, line 40 – column 7, line 5).

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. (US 2235681) as applied to claim 25 above and further in view of Seishi et al. (JP 1298626).

As to claim 26, it would have been obvious to perform bonding within an evacuated atmosphere because such is known in the art when locally heating/melting a bonding material to

bond two components together, as taught by Seishi (extracted translation provided by Applicant), where the vacuum environment prevents contamination of the finished device.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281, previously cited) in view of Wang et al. (US 6635321, previously cited).

As to claim 25, the reference teaches a method of manufacturing an airtight container by:

- setting a member (5) for defining an airtight space together with a substrate (3) to abut on the substrate to form a corner portion between the member and the substrate (Figure 4),
- applying a low-melting point substance (21) to the corner portion or to a portion to be the corner portion (column 3, lines 48-65),
- performing airtight bonding between the substrate and the member with the low-melting point substance to form a closed bonding line by performing heating to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding (column 4, lines 44-47), and then
- by curing the low-melting point substance, wherein the performing step includes penetrating the low-melting point substance between the substrate and member by heating the low-melting point substance (Figure 3).

It is unclear as to whether the reference teaches curing the low-melting point substance successively at a plurality of small areas arranged along the corner portion.

It is known in the art of making airtight containers to hermetically seal the periphery of the container using a low-melting point substance, such as indium, where the low-melting point substance is locally heated to reduce processing time and the need for expensive manufacturing

equipment, as taught by Wang '321 (Figure 6c; column 3, lines 20-24; column 7, line 66 – column 8, line 6; column 8, lines 17-54).

Therefore, it would have been obvious to one having ordinary skill in the art to locally heat the low-melting point substance of Wang '281 to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding because such is known in the art, as taught by Wang '321, where locally heating the low-melting point substance reduces processing time and the need for expensive manufacturing equipment.

*It is noted that the present invention does not actively cure the low-melting point substance. Instead, each successive heated/melted portion of the low-melting point substance undergoes cooling and solidification (curing) simply by moving the local heating means away from a heated/melted portion and placing it adjacent to a portion of the low-melting point substance that has yet to be heated (p. 21, lines 16-22). Wang '321 achieves cooling/solidification of the low-melting point substance in the same exact manner and therefore the reference teaches curing the low-melting point substance "successively at a plurality of small areas arranged along the corner portion."

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281) and Wang et al. (US 6635321) as applied to claim 25 above, and further in view of Seishi et al. (JP 1298626).

As to claim 26, it would have been obvious to perform bonding within an evacuated atmosphere because such is known in the art when locally heating/melting a bonding material to bond two components together, as taught by Seishi (extracted translation provided by Applicant), where the vacuum environment prevents contamination of the finished device device.

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281) and Wang et al. (US 6635321) as applied to claim 25 above, and further in view of Veerasamy (US 6365242).

As to claim 27, it would have been obvious to provide an underlying film, which has improved wettability with the low-melting point substance, beneath the low-melting point substance because such is known in the art when using a low-melting point substance, such as indium or indium alloy, to bond components together because the film allows the low-melting point substance to better adhere to the components, as taught by Veerasamy (Figures 6 and 9; column 8, lines 37-42; column 6, line 40 – column 7, line 5).

14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu et al. (JP 7-140903, listed in IDS, on-line translation provided by Examiner) in view of Yoshiki et al. (JP 2002-72921, listed in IDS, on-line translation provided by Examiner).

As to claim 25, the reference teaches a method of manufacturing an airtight container by:

- setting a member (1) for defining an airtight space together with a substrate (13) to abut on the substrate to form a corner portion between the member and the substrate,
- applying a low-melting point substance (2) to the corner portion or to a portion to be the corner portion (Figures 3-7; abstract),
- performing airtight bonding between the substrate and the member with the low-melting point substance to form a closed bonding line by performing heating to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding, and then

- by curing the low-melting point substance, wherein the performing step includes penetrating the low-melting point substance between the substrate and member by heating the low-melting point substance (Figures 3-7).

It is unclear as to whether the reference teaches curing the low-melting point substance successively at a plurality of small areas arranged along the corner portion.

It is known in the art of making airtight containers to hermetically seal the periphery of the container using a low-melting point substance where the low-melting point substance is locally heated to reduce processing time and the need for expensive manufacturing equipment, as taught by Yoshiki (Figures 4 and 6-7; sections [0016, 0022, 0032-0033] of on-line translation).

Therefore, it would have been obvious to one having ordinary skill in the art to locally heat the low-melting point substance of Yoshikazu to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding because such is known in the art, as taught by Yoshiki, where locally heating the low-melting point substance reduces processing time and the need for expensive manufacturing equipment.

*It is noted that the present invention does not actively cure the low-melting point substance. Instead, each successive heated/melted portion of the low-melting point substance undergoes cooling and solidification (curing) simply by moving the local heating means away from a heated/melted portion and placing it adjacent to a portion of the low-melting point substance that has yet to be heated (p. 21, lines 16-22). Yoshiki achieves cooling/solidification of the low-melting point substance in the same exact manner and therefore the reference teaches curing the low-melting point substance "successively at a plurality of small areas arranged along the corner portion."

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu et al. (JP 7-140903) and Yoshiki et al. (JP 2002-72921) as applied to claim 25 above and further in view of Seishi et al. (JP 1298626).

As to claim 26, it would have been obvious to perform bonding within an evacuated atmosphere because such is known in the art when locally heating/melting a bonding material to bond two components together to form an image display apparatus, as taught by Seishi (extracted translation provided by Applicant), where the vacuum environment prevents contamination of the display apparatus.

16. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu et al. (JP 7-140903) and Yoshiki et al. (JP 2002-72921) as applied to claim 25 above and further in view of Veerasamy (US 6365242, previously cited).

As to claim 27, it would have been obvious to provide an underlying film, which has improved wettability with the low-melting point substance, beneath the low-melting point substance because such is known in the art when using a low-melting point substance to bond components together because the film allows the low-melting point substance to better adhere to the components, as taught by Veerasamy (Figures 6 and 9; column 8, lines 37-42; column 6, line 40 – column 7, line 5).

17. Claims 13-14, 16-18 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vrijssen (US 4710673), as applied to claim 25 above and further in view of Veerasamy (US 6365242) and further in view of the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921).

As to claim 21, all the limitations were addressed with respect to claim 25 above, except the low-melting point substance being indium or indium alloy and heating the member by a first heating member at a temperature lower than 130°C, lower than a temperature at which the low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding.

Vrijssen teaches the low-melting point substance being indium or indium alloy (abstract; column 2, lines 4-10; column 3, lines 52-53; column 4, lines 20-21) and locally heating the low-melting point substance by a heating member (17) to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding (Figure 3; column 3, lines 27-56).

It is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9). It is also known in the airtight container art to heat a member by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 (column 9, lines 12-28) and Yoshiki (sections [0032-0033] of on-line translation).

Therefore, it would have been obvious to one having ordinary skill in the art to heat the member of Vrijssen by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by the second heating member (17) to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 and Yoshiki.

As to claim 20, all the limitations were addressed above with respect to claims 21 and 25, except for the method being used to make an image display apparatus having an airtight container containing display devices and forming the display devices. Vrijssen teaches such. As to claims 13-14, 16, 18 and 22-24 Vrijssen or Vrijssen in view of the collective teachings of Wang '321 and Yoshiki teaches such. As to claim 17, please refer to the rejection of claim 27 above.

18. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vrijssen (US 4710673), Veerasamy (US 6365242) and the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921) as applied to claim 21 above and further in view of Seishi et al. (JP 1298626, listed in IDS).

As to claim 15, please refer to the rejection of claim 26 above.

19. Claims 13-14, 16-18 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. (US 2235681) as applied to claim 25 above, and further in view of the collective teachings of Wang et al. (US 6444281) and Veerasamy (US 6365242) and further in

view of the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921).

As to claim 21, all the limitations were addressed with respect to claim 25 above, except the low-melting point substance being indium or indium alloy and heating the member by a first heating member at a temperature lower than 130°C, lower than a temperature at which the low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding.

Haven teaches locally heating the low-melting point substance by a heating member (92) to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding (Figure 19; p. 5, right column, lines 1-3; p. 6, left column, lines 1-22).

Haven teaches that a number of variations of low melting point metal can be used for the low melting point substance (p. 4, column 2, lines 61-62; p. 5, column 1, lines 69-75). Therefore, it would have been obvious to one having ordinary skill in the art to use indium or indium alloy because its use as a low melting point substance for forming a hermetic seal around the periphery of an airtight container is well known in the art, as taught by the collective teachings of Wang '281 (column 3, lines 48-65) and Veerasamy (column 6, lines 40-65), where such a low melting point substance requires low processing temperatures (Veerasamy; column 2, lines 65-67; column 8, lines 5-9).

It is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9). It is also known in the airtight container art to heat a member by a first

heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 (column 9, lines 12-28) and Yoshiki (sections [0032-0033] of on-line translation).

Therefore, it would have been obvious to one having ordinary skill in the art to heat the member of Haven by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by the second heating member (91) to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 and Yoshiki.

Regarding claims 22-23, Haven in view of Veerasamy teaches such. Regarding claim 24, Haven in view of Wang '321 and Yoshiki teaches such. Regarding claims 13-14 and 16-18, Haven or Haven in view of the collective teachings teach such.

20. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. (US 2235681), the collective teachings of Wang et al. (US 6444281) and Veerasamy (US 6365242), and the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921), as applied to claim 21 above, and further in view of the collective teachings of Misonou (US 2002/0064610, previously cited) and Minnaai et al. (US 6309733, previously cited).

As to claim 20, all the limitations were addressed above with respect to claims 21 and 25, except for the method being used to make an image display apparatus having an airtight container containing display devices and forming the display devices. It would have been obvious to use the method of Haven to make an image display apparatus having an airtight container containing display devices because it is known to make airtight containers that can be used as an insulated window or an image display apparatus where the airtight container contains display devices using the same process where the periphery of the container is hermetically sealed by a low-melting point substance, as taught by the collective teachings of Misonou (sections [0043, 0077]) and Minaai (column 4, lines 51-57; column 8, lines 61-64; column 9, lines 13-18).

21. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven et al. (US 2235681), the collective teachings of Wang et al. (US 6444281) and Veerasamy (US 6365242), and the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921), as applied to claim 21 above, and further in view of Seishi et al. (JP 1298626, listed in IDS).

As to claim 15, please refer to the rejection of claim 26 above.

22. Claims 13-14, 16-18, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281) and Wang et al. (US 6635321), as applied to claim 25 above, and further in view of Veerasamy (US 6365242) and further in view of the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921).

As to claim 21, all the limitations were addressed with respect to claim 25 above, except the low-melting point substance being indium or indium alloy and heating the member by a first heating member at a temperature lower than 130°C, lower than a temperature at which the low-

melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding.

Wang '281 teaches the low-melting point substance being indium or indium alloy (column 3, lines 48-65).

It is known in the art of making airtight containers to hermetically seal the periphery of the container using a low-melting point substance, such as indium, where the low-melting point substance is locally heated by a heating member to reduce processing time and the need for expensive manufacturing equipment, as taught by Wang '321 (Figure 6c; column 3, lines 20-24; column 7, line 66 – column 8, line 6; column 8, lines 17-54).

Therefore, it would have been obvious to one having ordinary skill in the art to locally heat the low-melting point substance of Wang '281 by a heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding because such is known in the art, as taught by Wang '321, where locally heating the low-melting point substance reduces processing time and the need for expensive manufacturing equipment.

It is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9). It is also known in the airtight container art to heat a member by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the

member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 (column 9, lines 12-28) and Yoshiki (sections [0032-0033] of on-line translation).

Therefore, it would have been obvious to one having ordinary skill in the art to heat the member of Wang '281 by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by the second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 and Yoshiki.

Regarding claims 22-23, Wang '281 in view of Veerasamy teaches such. Regarding claim 24, Wang '281 in view of the collective teachings of Wang '321 and Yoshiki teaches such. Regarding claims 13-14 and 16-18, Wang '281 or Wang '281 in view of the secondary references teach such.

23. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281), Wang et al. (US 6635321), Veerasamy (US 6365242), and the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921) as applied to claim 21 above, and further in view of the collective teachings of Misonou (US 2002/0064610) and Minnaai et al. (US 6309733).

As to claim 20, all the limitations were addressed above with respect to claims 21 and 25, except for the method being used to make an image display apparatus having an airtight container containing display devices and forming the display devices. It would have been

obvious to use the method of Wang '281 for making an image display apparatus having an airtight container containing display devices because it is known to make airtight containers that can be used as an insulated window or an image display apparatus where the airtight container contains display devices using the same process where the periphery of the container is hermetically sealed by a low-melting point substance, as taught by the collective teachings of Misonou (sections [0043, 0077]) and Minaai (column 4, lines 51-57; column 8, lines 61-64; column 9, lines 13-18).

24. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6444281), Wang et al. (US 6635321), Veerasamy (US 6365242), and the collective teachings of Wang et al. (US 6635321) and Yoshiki et al. (JP 2002-72921), as applied to claim 21 above, and further in view of Seishi et al. (JP 1298626, listed in IDS).

As to claim 15, please refer to the rejection of claim 26 above.

25. Claims 13-14, 16-18 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu et al. (JP 7-140903) and Yoshiki et al. (JP 2002-72921), as applied to claim 25 above, further in view of Yamada et al. (EP 1 258 906, listed in IDS), further in view of Veerasamy (US 6365242), and further in view of the collective teachings of Yoshiki et al. (JP 2002-72921) and Wang et al. (US 6635321).

As to claim 21, all the limitations were addressed with respect to claim 25 above, except the low-melting point substance being indium or indium alloy and heating the member by a first heating member at a temperature lower than 130°C, lower than a temperature at which the low-melting point substance can perform bonding, while heating locally the low-melting point

substance by a second heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding.

Yoshikazu teaches the low-melting point substance being frit glass but one reading the reference as a whole would have appreciated that such is not critical to the invention. Therefore, it would have been obvious to one having ordinary skill in the art to use indium or indium alloy because its use as a low-melting point substance, in place of frit glass, for forming a hermetic seal around the periphery of an image display apparatus is well known in the art because it requires low processing temperatures that do not damage the elements within the display apparatus, as taught by Yamada (sections [0010, 0016, 0143]).

It is known in the art of making airtight containers to hermetically seal the periphery of the container using a low-melting point substance where the low-melting point substance is locally heated by a heating member to reduce processing time and the need for expensive manufacturing equipment, as taught by Yoshiki (Figures 4 and 6-7; sections [0016, 0022, 0032-0033] of on-line translation).

Therefore, it would have been obvious to one having ordinary skill in the art to locally heat the low-melting point substance of Yoshikazu by a heating member to a temperature equal to or higher than a temperature at which the low-melting point substance can perform bonding because such is known in the art, as taught by Yoshiki, where locally heating the low-melting point substance reduces processing time and the need for expensive manufacturing equipment.

It is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9). It is also known in the airtight container art to heat a member by a first

heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Yoshiki (sections [0032-0033] of on-line translation) and Wang '321 (column 9, lines 12-28).

Therefore, it would have been obvious to one having ordinary skill in the art to heat the member of Yoshikazu by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 and Yoshiki.

As to claim 20, all the limitations were addressed above with respect to claims 21 and 25, except for the method being used to make an image display apparatus having an airtight container containing display devices and forming the display devices. Yoshikazu teaches such.

As to claims 13-14, 16, 18 and 22-24, Yoshikazu or Yoshikazu in view of the secondary references teaches such. As to claim 17, please refer to the rejection of claim 27 above.

26. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu et al. (JP 7-140903), Yoshiki et al. (JP 2002-72921), Yamada et al. (EP 1 258 906, listed in IDS), Veerasamy (US 6365242), and the collective teachings of Yoshiki et al. (JP 2002-72921) and

Wang et al. (US 6635321), as applied to claim 21 above and further in view of Seishi et al. (JP 1298626).

As to claim 15, please refer to the rejection of claim 26 above.

***Response to Arguments***

27. Applicant's arguments filed 4/19/07 have been fully considered but they are not persuasive.

Applicant argues that all of the primary citations from the previous action fail to teach or suggest heating the member by a first heating member at a temperature lower than that at which the seal bonding material can perform bonding, and heating locally the seal bonding material by a second heating member to a temperature at which the seal bonding material can perform bonding.

In response, the Examiner acknowledges that the primary references lack this teaching or suggestion but points out that the secondary references to Wang '321 and Yoshiki do teach this. Applicant is invited to reread the 103 rejections set forth in paragraphs 17, 19, 22 and 25 above. To reiterate:

> "It is well known in the airtight container art that indium and indium alloy perform bonding at temperatures less than or equal to 130°C (Veerasamy at column 6, lines 40-65 and column 8, lines 5-9). It is also known in the airtight container art to heat a member by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 (column 9, lines 12-28) and Yoshiki (sections [0032-0033] of on-line translation).
>
> Therefore, it would have been obvious to one having ordinary skill in the art to heat the member of [primary reference] by a first heating member at a temperature lower than 130°C, lower than a temperature at which a low-melting

point substance can perform bonding, while heating locally the low-melting point substance by a second heating member to a temperature higher than a temperature at which the low-melting point substance can perform bonding because this prevents thermal shock to the member and substrate being bonded by the low-melting point substance, as taught by the collective teachings of Wang '321 and Yoshiki."

***Conclusion***

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Ward whose telephone number is 571-272-1223. The examiner can normally be reached on Mon-Fri between 9AM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica L. Ward
Primary Examiner
Art Unit 1733